

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/813,908A
Source: IFW/6
Date Processed by STIC: 10/28/05

ENTERED



IFW16

RAW SEQUENCE LISTING

DATE: 10/28/2005

PATENT APPLICATION: US/10/813,908A

TIME: 11:39:21

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF4\10272005\J813908A.raw

3 <110> APPLICANT: Frey, Joachim
 4 Stuber, Katja
 5 Thornton, Julian C
 6 Kuzyk, Michael A.
 7 Burian, Jan
 9 <120> TITLE OF INVENTION: Type III Secretion Pathway in Aeromonas Salmonicida, and
 Uses
 10 Therefor
 12 <130> FILE REFERENCE: UB001/2850/US
 14 <140> CURRENT APPLICATION NUMBER: US 10/813,908A
 15 <141> CURRENT FILING DATE: 2004-03-26
 17 <150> PRIOR APPLICATION NUMBER: US 10/416,902
 18 <151> PRIOR FILING DATE: 2001-11-15
 20 <150> PRIOR APPLICATION NUMBER: PCT/CA 01/01589
 21 <151> PRIOR FILING DATE: 2001-11-15
 23 <150> PRIOR APPLICATION NUMBER: US 60/248,864
 24 <151> PRIOR FILING DATE: 2000-11-15
 26 <160> NUMBER OF SEQ ID NOS: 15
 28 <170> SOFTWARE: PatentIn version 3.3
 30 <210> SEQ ID NO: 1
 31 <211> LENGTH: 47
 32 <212> TYPE: PRT
 33 <213> ORGANISM: Aeromonas salmonicida
 35 <400> SEQUENCE: 1
 37 Glu Leu Lys Arg Leu Ile Arg Leu Leu Pro Val Glu Leu Phe Ser Glu
 38 1 5 10 15
 41 Glu Glu Gln Arg Gln Asn Leu Leu Gln Cys Cys Gln Gly Ala Leu Asp
 42 20 25 30
 45 Asn Ala Ile Glu Arg Glu Glu Asp Glu Leu Ser Gly Glu Ser Ser
 46 35 40 45
 49 <210> SEQ ID NO: 2
 50 <211> LENGTH: 123
 51 <212> TYPE: PRT
 52 <213> ORGANISM: Aeromonas salmonicida
 54 <400> SEQUENCE: 2
 56 Met Asn Trp Ile Glu Pro Leu Leu Val Gln Phe Cys Gln Asp Leu Gly
 57 1 5 10 15
 60 Ile Thr Ile Gly Asp Asn Pro His Ser Leu Ile Gln Leu Glu Leu Glu
 61 20 25 30
 64 Gln Ser Gly Thr Leu Gln Leu Glu Arg His Gln Gly Gln Leu Thr Leu
 65 35 40 45
 68 Trp Leu Ala Arg Ala Val Pro Trp His Gln Ser Gly Glu Ala Ile Arg
 69 50 55 60
 72 Arg Ala Met Thr Leu Thr Ala Ala Ala Gln Gly Pro Ala Leu Pro Val

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73 65          70          75          80
76 Arg Ser Gly Trp Leu Gly Glu Glu Gln Leu Ile Leu Phe Val Ser Leu
77          85          90          95
80 Asp Glu Arg Ala Val Thr Leu Pro Gln Leu His Gln Ala Val Thr Thr
81          100          105          110
84 Leu Thr Arg Leu Gln Arg Glu Val Leu Ala Ser
85          115          120
88 <210> SEQ ID NO: 3
89 <211> LENGTH: 121
90 <212> TYPE: PRT
91 <213> ORGANISM: Aeromonas salmonicida
93 <400> SEQUENCE: 3
95 Met Ser Arg Ile Thr Ala Ala His Ile Gly Ile Glu Gln Leu Ser Ala
96 1          5          10          15
99 Ile Ser Leu Asp Asp Gln Glu Arg Ser Leu Pro Gly Arg Tyr Ala Leu
100          20          25          30
103 Leu Pro Asp Gly Gln Ser Ile Glu Pro His Ile Ser Arg Leu Tyr Pro
104          35          40          45
107 Glu Arg Leu Ala Asp Arg Val Leu Leu Asp Phe Ala Thr Pro Asp Arg
108          50          55          60
111 Gly Phe His Asp Leu Leu Arg Pro Val Asp Phe Asn Gln Ala Met Gln
112 65          70          75          80
115 Gly Leu Arg Ser Val Leu Ala Glu Gly Gln Ser Pro Glu Leu Arg Ala
116          85          90          95
119 Ala Ala Ala Leu Leu Glu Gln Met His Ala Asp Glu Gln Leu Met Gln
120          100          105          110
123 Met Thr Leu His Leu Leu His Lys Val
124          115          120
127 <210> SEQ ID NO: 4
128 <211> LENGTH: 116
129 <212> TYPE: PRT
130 <213> ORGANISM: Aeromonas salmonicida
132 <400> SEQUENCE: 4
134 Met Thr Met Val Leu Thr Ser Gln Gln Gln Asp Ala Leu Leu Leu Thr
135 1          5          10          15
138 Gly Trp Leu Gln Leu Gln Tyr Gly His Pro Asp Lys Ala Ser Val Leu
139          20          25          30
142 Leu Ala Ala Leu Leu Gln Ile His Pro Asp His Gln Gly Gly Arg Arg
143          35          40          45
146 Thr Leu Leu Val Ala Leu Leu Lys Gln Gly Glu Gly Glu Ala Ala Leu
147          50          55          60
150 Ala His Val Asp Gln Leu Met Gln Gln Gly Glu Ala Asp Gly Pro Leu
151 65          70          75          80
154 Trp Leu Cys Arg Ser Arg Ala Cys Gln Leu Ala Gly Arg Leu Asp Glu
155          85          90          95
158 Ala Arg Phe Ala Tyr Gln Gln Tyr Leu Glu Leu Glu Glu Gln Asn Glu
159          100          105          110
162 Ser Thr His Pro
163          115

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166 <210> SEQ ID NO: 5
167 <211> LENGTH: 116
168 <212> TYPE: PRT
169 <213> ORGANISM: Aeromonas salmonicida
171 <400> SEQUENCE: 5
173 Met Thr Met Val Leu Thr Ser Gln Gln Gln Asp Ala Leu Leu Leu Thr
174 1 5 10 15
177 Gly Trp Leu Gln Leu Gln Tyr Gly His Pro Asp Lys Ala Ser Val Leu
178 20 25 30
181 Leu Ala Ala Leu Leu Gln Ile His Pro Asp His Gln Gly Gly Arg Arg
182 35 40 45
185 Thr Leu Leu Val Ala Leu Leu Lys Gln Gly Glu Gly Glu Ala Ala Leu
186 50 55 60
189 Ala His Val Asp Gln Leu Met Gln Gln Gly Glu Ala Asp Gly Pro Leu
190 65 70 75 80
193 Trp Leu Cys Arg Ser Arg Ala Cys Gln Leu Ala Gly Arg Leu Asp Glu
194 85 90 95
197 Ala Arg Phe Ala Tyr Gln Gln Tyr Leu Glu Leu Glu Glu Gln Asn Glu
198 100 105 110
201 Ser Thr His Pro
202 115
205 <210> SEQ ID NO: 6
206 <211> LENGTH: 93
207 <212> TYPE: PRT
208 <213> ORGANISM: Aeromonas salmonicida
210 <400> SEQUENCE: 6
212 Met Leu Val Arg Arg Glu Gly Glu Arg Ala Gly Leu Ala Asn Pro Phe
213 1 5 10 15
216 Ala Ala Leu Tyr Leu Leu Ala Glu Ala Thr Leu Ala Val Leu Gly Pro
217 20 25 30
220 Gly His Phe Leu Tyr Gly Asn Val Asp Val Phe Arg Ser Ser Ser Leu
221 35 40 45
224 Ser Ser Glu Arg Leu Gly Arg Phe Tyr Leu Arg Trp Thr Gly Ala Ser
225 50 55 60
228 Glu Pro Glu Pro Gly Trp Phe Met Leu Ala Thr Glu Gln Val Cys Ser
229 65 70 75 80
232 Leu Arg Asp Met Arg Lys Arg Gln Lys His Gly Leu Ala
233 85 90
236 <210> SEQ ID NO: 7
237 <211> LENGTH: 94
238 <212> TYPE: PRT
239 <213> ORGANISM: Aeromonas salmonicida
241 <400> SEQUENCE: 7
243 Met Lys Gln Pro Arg Phe Ala Asp His Ser Glu Thr Ile Ser Gln Ala
244 1 5 10 15
247 Glu His Gly Ile Ala Asp Ser Asp His Arg Asn Ala Leu Leu Gln Glu
248 20 25 30
251 Met Leu Ala Gly Leu Ala Leu Ser Asp Gln Thr Cys Gln Leu Leu Phe
252 35 40 45

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255 Glu Ala Pro Thr Glu Gln Val Ala Val Ala Glu Gln Glu Leu Leu Ala
256      50                      55                      60
259 Glu Ile Gln Arg Arg Gln Ala Leu Leu Pro Ala Gln Pro Gly Glu Gly
260 65                      70                      75                      80
263 Arg Lys Ser Arg Arg Pro Thr Ile Met Arg Gly Leu Met Ile
264      85                      90
267 <210> SEQ ID NO: 8
268 <211> LENGTH: 361
269 <212> TYPE: PRT
270 <213> ORGANISM: Aeromonas salmonicida
272 <400> SEQUENCE: 8
274 Met Ser Thr Ile Pro Asp Tyr Asn Thr Asn Pro Gly Ala Phe Val Gly
275 1                      5                      10                      15
278 Trp Leu Asp Val Gln Ala Leu Asn Thr Leu Pro Gly Asn Lys Asn Pro
279      20                      25                      30
282 Lys Leu Thr Glu Leu Val Glu Leu Leu Lys Gly Lys Ile Thr Ile Ser
283      35                      40                      45
286 Ala Asp Ser Ser Thr Ala Leu Ser Lys Glu Gln Leu Glu Lys Leu Leu
287      50                      55                      60
290 Ala Ala Tyr Leu Thr Asp Pro Ala Ser Ile Asn Gly Gly Trp Ala Met
291 65                      70                      75                      80
294 Gly Gln Phe Lys Gly Gly Gln Asp Ala Ala Ile Ala Ala Ile Lys Gly
295      85                      90                      95
298 Val Ile Glu Arg Gly Ala Lys Gln Thr Pro Pro Val Thr His Trp Thr
299      100                     105                     110
302 Ile Pro Glu Phe Met Leu Leu Ser Leu Ser Ala Leu Thr Met Glu Arg
303      115                     120                     125
306 Thr Asp Asp Asp Leu Ile Thr Thr Phe Thr Gly Val Met Met Phe Gln
307      130                     135                     140
310 Asp Asn Gln Arg Lys Gly Leu Arg Asp Glu Leu Ala Glu Met Thr Ala
311 145                     150                     155                     160
314 Glu Leu Lys Ile Tyr Gly Val Ile Gln Ser Glu Ile Asn Gln Val Leu
315      165                     170                     175
318 Ser Ala Ala Ser Asn Gln Thr Phe Lys Thr Asn Phe Asn Leu Met Asp
319      180                     185                     190
322 Tyr Lys Leu Tyr Gly Tyr Glu Ser Leu Ala Lys Phe Met Glu Gly Gly
323      195                     200                     205
326 Glu Phe Lys Leu Leu Ser Lys Met Phe Ser Asp Glu Gln Val Thr Lys
327      210                     215                     220
330 Ala Gln Gln Asp Phe Thr Asn Ala Lys Asn Glu Leu Glu Asn Val Thr
331 225                     230                     235                     240
334 Ser Thr Ser Leu Asn Pro Lys Ile Gln Ala Glu Ala Lys Thr Asp Tyr
335      245                     250                     255
338 Glu Arg Lys Lys Ala Ile Phe Glu Glu Ile Val Glu Thr Gln Ile Ile
339      260                     265                     270
342 Thr Leu Lys Thr Phe Leu Glu Ser Asp Leu Lys Lys Ser Gly Ala Met
343      275                     280                     285
346 Ser Gly Ile Glu Ala Glu Tyr Lys Tyr Asp Lys Asp Asn Asn Lys Leu
347      290                     295                     300

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350 Gly Asn Phe Ser Thr Ser Val Ser Asp Arg Ser Arg Pro Leu Asn Asp
351 305                      310                      315                      320
354 Leu Val Ser Glu Lys Thr Ala Arg Leu Asn Asp Val Ser Ser Arg Tyr
355                      325                      330                      335
358 Asn Ala Ala Ile Glu Ala Leu Asn Arg Phe Ile Gln Lys Tyr Asp Ser
359                      340                      345                      350
362 Ile Met Arg Asp Ile Leu Gly Ala Ile
363                      355                      360
366 <210> SEQ ID NO: 9
367 <211> LENGTH: 159
368 <212> TYPE: PRT
369 <213> ORGANISM: Aeromonas salmonicida
371 <400> SEQUENCE: 9
373 Met Gln Thr Asp Thr Thr Leu Thr Pro Glu Tyr Glu Ala Glu Leu Glu
374 1                      5                      10                      15
377 Ala Phe Met Ala Asp Gly Gly Thr Leu Ala Met Leu Gln Asp Ile Ser
378                      20                      25                      30
381 Gly Asp Thr Leu Glu Gln Leu Tyr Ala Leu Ala Phe Ser Gln Tyr Gln
382                      35                      40                      45
385 Ala Gly Lys Trp Glu Asp Ala His Lys Ile Phe Gln Ala Leu Cys Met
386                      50                      55                      60
389 Leu Asp His Tyr Glu Pro Arg Tyr Phe Leu Gly Leu Gly Ala Cys Arg
390 65                      70                      75                      80
393 Gln Ala Met Gly Glu Phe Glu Thr Ala Val Gln Ser Tyr Ser Phe Gly
394                      85                      90                      95
397 Ala Met Leu Asp Leu Lys Asp Pro Arg Phe Pro Phe His Ala Gly Glu
398                      100                     105                     110
401 Cys Arg Leu Gln Gln Gly Asp Leu Asn Gly Ala Glu Ser Gly Phe His
402                      115                     120                     125
405 Ser Ala Arg Leu Leu Ala Asp Thr Asp Pro Gln Gln Ala Asp Leu Ala
406                      130                     135                     140
409 Ala Ser Ala Lys Val Met Leu Glu Ala Ile Ala Ile Arg Arg Asp
410 145                     150                     155
413 <210> SEQ ID NO: 10
414 <211> LENGTH: 5678
415 <212> TYPE: DNA
416 <213> ORGANISM: Aeromonas salmonicida
418 <400> SEQUENCE: 10
419 gagctcaagc ggctgatccg cctgctgccg gtggagctgt tcagtgaaga ggagcagcgc      60
421 cagaatctgt tgcagtgtcg tcaggggtgcg ctcgataacg ccatcgagcg ggaagaggat      120
423 gagttgtctg gagagtcgtc atgaactgga ttgaaccctt gctgggtgcag ttttgccagg      180
425 atttgggcat caccataggg gataaccccc attcgctgat ccagcttgaa ctggagcaga      240
427 gcggcactct gcagctggag cgccatcagg ggcaactgac cctatggttg gcccgcgccg      300
429 tgccctggca tcagagtggc gaggccattc gccgcgccat gaccttgact gccgcggcgc      360
431 aagggccggc actgccggtg cgcagcggct ggttggggga ggagcagttg atcctcttcg      420
433 tctccctgga tgagcgggcc gtgactctgc ccagctcca tcaggccgtg accaccctga      480
435 cccggttgca gcgagaggtg ctggcgatc gagccggtc actgccgcgc ataccggtat      540
437 cgagcagctc agcgccatct ccctcgacga tcaggagcgc agcctgccgg ggcgttatgc      600
439 cctgttgccc gatggccagt ccatcgaacc ccatatcagc cgcctctacc ccgagcggct      660

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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/28/2005
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Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:11,12,13,14,15

VERIFICATION SUMMARY

DATE: 10/28/2005

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Output Set: N:\CRF4\10272005\J813908A.raw